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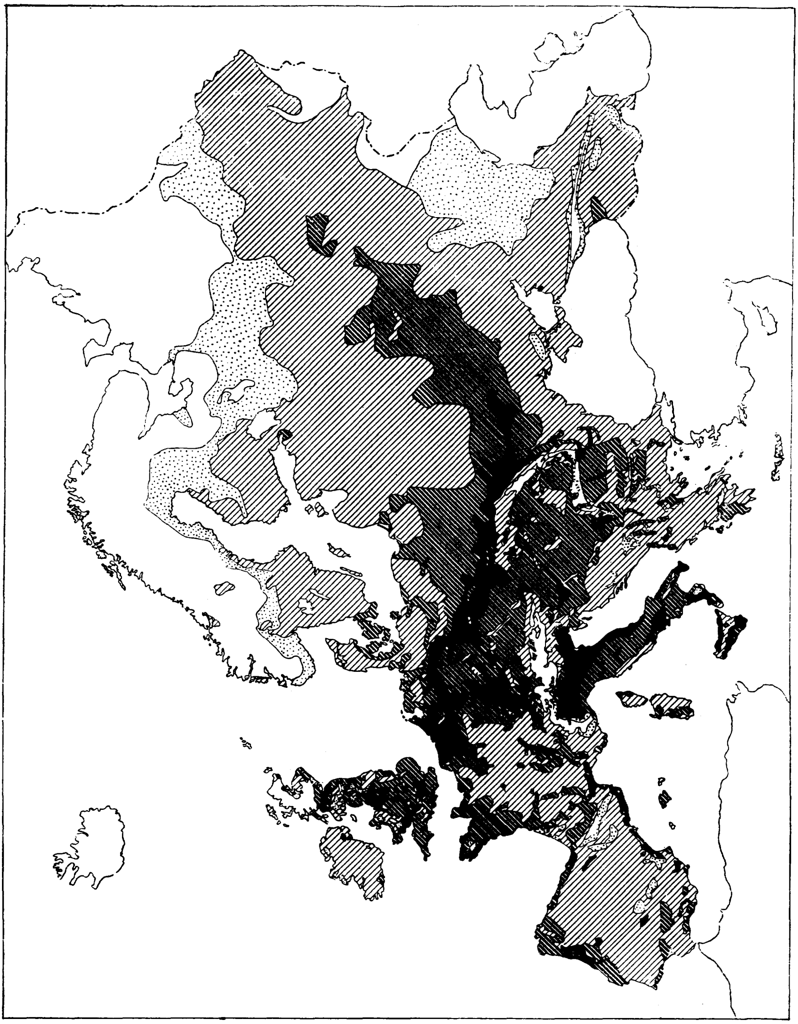
A NEW DENSITY OF POPULATION MAP OF EUROPE

By **MARK JEFFERSON**

In the January number of *Petermanns Mitteilungen* (Vol. 59, I, 1913, pp. 7–11, with Pl. 2) Dr. Weise publishes a painstaking and extremely interesting new map of the distribution of population densities in Europe. Despite his modest disclaimer it must certainly be regarded as *the* map for its continent. Much of the interest lies in the presumable inclusion of the new materials of the censuses of 1910–11 and much in the considerable detail with which the map is drawn.

Some idea of the result may be had from the accompanying sketch in black and white, which has been traced and reduced from Dr. Weise's map, with a simplification of his twelve colors or shades of color to five grades. His shades are divided at densities of 0.1, 1, 10, 25, 50, 75, 100, 150, 200, 300, and 500 people to a square kilometer, those of the present sketch in round numbers at 2½, 25, 125, and 250 per square mile, as in the writer's " Anthropography of North America " (March *Bulletin,* pp. 161–180).

One distinct feature, the sparseness to absence of population on the Scotch and the Scandinavian highlands, as well as along the crest of the Pyrenees, the Alps, the Carpathians and the Caucasus, comes out plainly on both maps. On Dr. Weise's map there are two shades here, yellow and orange, that pick out these waste places with great distinctness. The great positive feature of the map is the strip of manufacturing and city population from the Rhine mouth eastward along the fiftieth parallel at the foot of the moderate mountains of Central Europe into southern Russia, at a point south of Kiew. A great arm of the same very dense population strikes off southward along the valley of the middle Rhine to include for its southern termination the Swiss Alpine foreland between Lakes Constance and Geneva. Just beyond the Alps, again, lies the third and last of the great European masses of very dense population, namely, in the Po valley and along Italy's Adriatic border—no longer a seat of great manufactures but of an intensive, semi-oriental agriculture. Besides these great masses, each smaller one, too, is full of suggestion to the student, as the London basin, the English Midlands, the south Welsh coalfields and the Scotch Lowlands. The centrifugal tendencies, furthermore, of the popu-



Map of the Density of Population of Europe, based on the map by L. Weise (*Petermanns Mitteilungen*, Vol. 59, I, 1913, Pl. 2). Scale, 1: 42,000,000. Density grades per square kilometer: black, 100–500 inhabitants and more; bars, 50–100; lines, 10–50; dots, 1–10; white (within political Europe), 0–1.

lations of France and the Iberian Peninsula are strikingly contrasted with the centripetal ones of Scandinavia about the Baltic entrance.

With regard to the denser populations Dr. Weise's colored map does not so well bring out these relations, for his color scheme is not well graded to the intensity of the phenomena represented, strong, striking colors being used for very moderate population densities, such as purple for the density of 50–75 to the square kilometer, while an inconspicuous slaty gray (on the legend an olive green) stands for the double density 100–150. Another purple on the legend, a little lighter, perhaps, stands for 200–300. On the map it appears as a quite different shade, very much lower in color value than the red that represents 20–25 people to the square kilometer. Dr. Weise is not one of those geographic sinners who use any color for any step in a graded scheme of intensities, only he has so many grades that he makes impossible the desired "Anschaulichkeit und Übersichtlichkeit" (clearness and legibility?). The fact is, so much detail on a small scale map is well-nigh impracticable, though Germans have done color printing so wonderful that they might have devised twelve better graded shades than these. The present venture is so variegated with colors that are almost meaningless that it is simply a storehouse of facts of great interest that must be laboriously dug up from map and legend. Yet withal it is a work to be very grateful for.

The paper on the representation of population densities for Europe, which accompanies the map, is not very closely related to it, being full of refinements that cannot possibly be applied to a map on the scale used, 1:10,000,000. Nor does it give a satisfactory account of the method of drawing the map. The author proposes about 500 square kilometers for his unit area. He would like to calculate his densities for that unit, but his statistics did not allow it. What smallest units he was able to use in the various countries he does not state. It would be of very great interest to know.

As near as the reviewer can make out, cities are to be located on the map if their density of population, *calculated to an assumed uniform area of 5,000 square kilometers each*, exceeds a fourth of the density of the district within which the city lies. In that case the total city population is subtracted from that of the district before calculating the density for this latter. In practice, however, all the cities that were already on the Stieler map of Europe used as a base remain there " for practical reasons "! So the cities present may not all have been deducted.

What is said about drawing boundaries between different densities is also somewhat vaguely stated. An example or two would have helped greatly. How, for instance, did he fix the boundaries of the purple tint that includes Berlin and the lower Oder? So smooth a line is of course generalized. On this scale generalization is inevitable. But just what statistical units did he use, what assumptions were made, how much personal equation is there is the generalization? So, too, how shall we interpret the tints and boundaries? For us, living so far away it is strange to see the Kurische Nehrung more densely settled than the coast east and west of it. It seems to share the density of its hinterland. Is this a real equality of density of settlement or only some sort of equivalence? It is conceivable, for instance, that scattered fishing hamlets on the reef might give a numerical equivalence of population to an evenly distributed farm country inland.

This is the sort of thing that the general, small-scale map can never show. Here all Dr. Weise's refinements of theory of making the map express everything are wasted. A map on a larger scale would show easily what on this scale must be reserved for the printed commentary that should go along with the map. This printed commentary could give us the rules of interpretation as far as the map maker knows them from the ground or from the more detailed figures before him.